General comments:

In the revised manuscript, authors have addressed most of the questions I raised in the previous round. I appreciate the efforts authors made to improve the manuscript.
However, I think some minor revisions are required for publishing this study.

Specific comments:

2.1 Harmonization of geographical information
Table 1: Could you remove the first column of this table and add one more column to indicate the number of water systems (or the percentages of area and volume accounted for the total area and volume of all lakes) were processed by the specific method? I noticed that you add the information in the text, but it will be more intuitive to see them in the table.

3.2 Lake model
The reference for lake model mainly states where the input data come from. Could you refer some literature applying this model?

5.7 Vertical profile of lake water temperature
Figure 12: Why Lake Huron has two sets of observations?
Line: 601-602: Followed by my comment in the previous round, could you make a more specific discussion about the effect of underestimation of water depth, not just say it can cause bias? For example, the overestimation of water temperature in Lake Ontario and Huron (Figure 12) during the spring and fall time may be due to the underestimation of the water volume? And the coupled model, to some extent, enhanced the bias. Could you discuss the reason of these biases?

Code and data availability: authors have updated the source code and dataset in Zenodo, but to improve the reproducibility of the model, I think it is better to add a simple 'readme' file to clarify how to execute the model and what are the files in the 'map_glob_15min_lake' folder.

Technical corrections:

Line 674-678: Why is this sentence in bold?

Table 4: In the third column, what do the values inside the basket indicate? Could you add the explanation into the caption?